

GSFC PROJECT MANAGEMENT CHECKLIST

Project Team

- ☐ The leader works well with the team and external interfaces.
- ☐ Science and mission assurance elements are adequately represented in the organization.
- ☐ Roles and responsibilities are well defined.
- ☐ Team members understand the importance of their individual contributions.
- ☐ Staffing is adequate for the project size, and the right people are in place.
- ☐ Overtime guidelines are in place to preclude burnout.

Communications

- ☐ All team members are encouraged to report problems.
- ☐ Open communications is encouraged and all parties have an opportunity to be heard.
- ☐ A "Top 10" concerns list is reviewed and acted upon weekly.
- ☐ Communications between the project and supporting organizations is good.

Requirements

- ☐ Full and minimum mission success criteria are established at the outset.
- ☐ Mission requirements are established and agreed upon by all parties.
- ☐ The level of detail in the mission requirements is sufficient.
- ☐ The requirements flowdown is complete.
- ☐ Project team demonstrates awareness and compliance with laws and regulations such as the National Environmental Policy Act (NEPA), International Traffic In Arms (ITAR), etc.

Cost/Schedule

- ☐ A "bottoms up" budget and schedule has been developed.
- ☐ The cost and schedule is adequate to accommodate scope.
- ☐ Adequate cost reserves and schedule slack are available to solve problems.
- ☐ Potential descopes are defined with an implementation timeline.
- ☐ The schedule has been coordinated to ensure the right skills are available when needed.
- ☐ Metrics are in place to quantitatively measure cost & schedule.

Systems Engineering

- ☐ A formal process is in place to incorporate lessons learned from previous missions.
- ☐ Flight/ground trades have been performed.
- ☐ The mission architecture provides adequate data for failure investigation.
- ☐ Single-point failures have been identified and justified.
- ☐ Adequate margins have been identified.

- ❑ A rigorous change control process is in place.
- ❑ Any required new technology is at the appropriate Technology Readiness Level.
- ❑ Are metrics in place to quantitatively measure accomplishments.
- ❑ Has a reentry debris analysis been conducted and are Agency orbital debris requirements met.

Validation and Verification

- ❑ The verification matrix is complete.
- ❑ Facilities are established for simulation, verification and validation.
- ❑ Plans are in place for Independent Validation and Verification.
- ❑ Proper application of engineering units will be verified throughout the system
- ❑ Plans and procedures are in place for normal and contingency testing and training.
- ❑ Tests are repeated after configuration changes.
- ❑ To the extent possible, end-to-end testing will be conducted.
- ❑ To the extent possible, testing will be done in the flight configuration (test as you fly).
- ❑ Mission-critical software is identified in both the flight and ground systems.

Risk Management/Analysis/Test

- ❑ Mission risk was defined at the outset with buy-in at all management levels.
- ❑ Risk trades have been performed and risks are being actively tracked and managed.
- ❑ Risk assessment tools (Failure Modes and Effects Analysis, Fault Tree Analysis, Probabilistic Risk Assessment) are being used.
- ❑ Potential failure scenarios have been identified and modeled.
- ❑ The risks of new technology have been properly mitigated with backups identified.
- ❑ Special attention has been given to proper use of heritage hardware and software.
- ❑ Ensure that risk plans address intraprogrammatic (mission to mission) dependencies.

Independent & Peer Reviews

- ❑ A System Review Plan is in place.
- ❑ Extensive peer reviews are conducted.
- ❑ Peer review results are reported to higher-level reviews.
- ❑ Key technical experts are identified for sustained support to reviews.
- ❑ Line organizations are committed to providing the right people for sustained support of reviews.

Documentation

- ❑ Design decisions and limitations have been documented and communicated.
- ❑ The documentation is sufficient to support unanticipated personnel changes.
- ❑ Externally imposed budget/schedule changes and their impacts are documented.

Transition to Operations

- ❑ A development-to-operations transition is planned, including the ground system.
- ❑ A Detailed Missions Requirement (DMR) document has been developed for the Launch & Early Orbit Phase and nominal operations.
- ❑ Nominal and worst case ground network loading analyses have been completed.

- ❑ The operations team has been integrated into the flight hardware development effort.
- ❑ A sufficient number of core people transition to operations to ensure continuity.
- ❑ The ops team receiving the mission is sufficiently knowledgeable to run the show.
- ❑ Contingency planning has been validated and tested.
- ❑ All teams are trained to execute contingency plans.
- ❑ Mission rules have been formulated.
- ❑ The ops team has executed mission rules in simulations.
- ❑ Plans are in place to ensure visibility and real-time telemetry during critical mission phases.
- ❑ A mission specific IT Security Plan that addresses the requirements in NPG 2810.1, including personnel screening, has been written and reviewed/approved by NASA/GSFC security personnel.